Service Reference Guide

HP Compaq vc4815 Thin Client

Document Part Number: 480421-001

January 2008

WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

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Product Description

The HP Compaq Thin Client vc4815 Series are Redflag Linux-based terminals that connect over a network to a server where all processing and storage occurs. Because of the nature of the products, troubleshooting is significantly simpler than on a standard PC and previous thin clients.

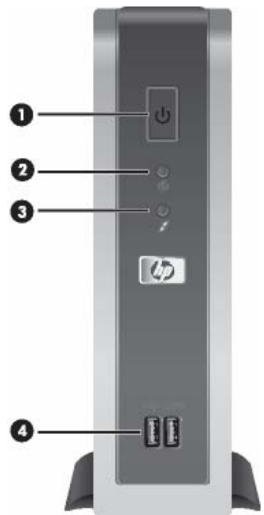
The Graphical User Interface (GUI) is Chinese on all thin clients. If you are using a foreign language keyboard, you will need to set localized settings to perform the localization between a server-based application and the device, but interaction with the unit itself remains in Chinese.

Network Firmware

PXE (Pre-boot Execution Environment) is supported on all HP Compaq Thin Client vc4815 Series products.

PXE allows a client to boot from a server on a network prior to booting the embedded Operating System (OS) from the local Flash module. As long as the system is connected to AC power, the Network Interface Controller (NIC) on a PXE-enabled client remains powered even when the system is turned off. This allows a network administrator to remotely wake up the unit and perform various management tasks, including loading the operating system and other software onto the device from a server over the network.

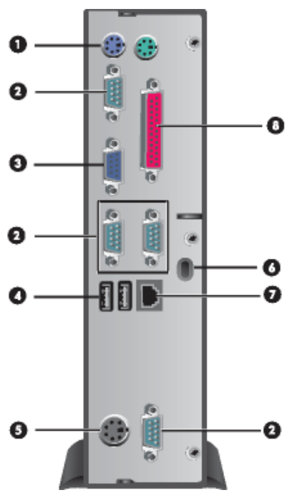
HP Compaq Thin Client vc4815 Series



Front view - vc4815

1	Power button	3	Flash activity LED
2	Power LED	4	USB ports (2)

HP Compaq Thin Client vc4815 Series



Rear View of the vc4815

1	PS/2 connectors (2)	5	Power connector
2	Serial connectors (4)	6	Lock Slot
3	Monitor connector	7	Ethernet RJ-45 connector
4	Universal Serial Bus (USB) connectors (2)	8	Parallel connector

CAUTION: The vc4815 Series power cord connector is for use only with the supplied power adaptor. Replace only with the same or equivalent type as recommended by the manufacturer.

Serial Number Location

The serial number is displayed on the side of the unit.



Connecting USB Equipment

USB mouse devices and keyboards do not require special drivers and are considered to be plug and play peripherals. Certain USB devices such as printers and modems, however, may require special drivers. For information on requirements for special drivers, refer to the documentation that is included with the USB device.

Locating Additional Information

The following documentation is available to support these products:

- *Quick Setup*
- *Hardware Reference Guide*
- *Redflag Linux User manual*
- Customer and Service Notifications, Bulletins and Advisories
- Quickspecs

✎ Documentation, white papers, and drivers are subject to change. For the latest HP thin client documentation, visit the following Web site: http: //h18004.www1.hp.com/products/thinclients/software.html

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Spare Parts Lists

vc4815 Series Spare Parts List

The spare parts tables that follow provide a listing of the spare parts available for the Thin Client vc4815 Series.

vc4815 Series Spare Parts Table

Description	Spare Part Number
SPS-Base, vc4815 512F/512R Linux	458813-001
SPS-Base, vc4815 1GBF/512R Linux	458814-001
SPS-Base, vc4815 2GBF/512R Linux	458815-001
SPS-KYBD USB, Basic, Vista-PRC	435382-AA1
SPS-MOUSE,OPTICAL CARBONITE	390938-001

For a full list of supported and leveraged Hewlett-Packard and third party options, go to:

http://h18004.www1.hp.com/products/thinclients/software.html

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HP vc4815 Series Setup (F10) Utility

Using HP vc4815 Series Setup (F10) Utility

The Setup utility can be accessed only by turning the computer on or restarting the system. To access the Setup Utility menu, complete the following steps:

1. Turn on or restart the computer.
2. When the **F10 <BIOS Setup>** message displays in the task bar at the bottom of the screen, press the **F10** key.

✎ If you do not press the **F10** key while the message is displayed, you must restart the computer again to access the utility. When the F10 Post Screen display is set to zero seconds, it may be necessary to press and hold **F10** on the keyboard, then power on the computer.

3. A choice of five menu headings and five task headings appears in the Setup Utility menu:

   Menu Headings: System Information, Standard CMOS Features, Advanced BIOS Features, Integrated Peripherals, and Power Management Setup.

   Task Headings: Load Defaults Setting, Set Supervisor Password, Set User Password, Save Setting and Exit, and Exit without Saving.

4. Use the arrow (up and down, or left and right) keys to select the appropriate heading, then press the **Enter** key. To return to the Setup Utility menu, press the **Esc** key.
5. To apply and save changes, select **Save Setting and Exit Setup.**

✎ If you have made changes that you do not want applied, select **Exit without Saving.**

✎To reset to factory settings, select **Load Defaults Setting.** This option will restore the original factory system defaults.

△ **CAUTION:** Do NOT turn the computer power OFF while the ROM is saving your F10 Setup changes because the CMOS could become corrupted. It is safe to turn off power to the computer ONLY after you exit the F10 Setup screen.

vc4815 Series Setup Utility

Heading	Option	Description
System Information		Lists: - Product name - BIOS Version - BIOS Release Date - System Chipset Type - Processor type - Processor Speed - CPU ID - DDR Memory Size - UUID (Universal Unique ID) - Chassis Serial Number - Set Asset TAG number - Asset Tag Number

✎ Support for specific Setup options may vary depending on your hardware configuration.

vc4815 Series Setup Utility ***(Continued)***

Heading	Option	Description
Standard CMOS Features	System Date	Allows you to set the date
	System Time	Allows you to set the time.
	IDE channel 0 Master IDE Channel 1 Master	Indicates ATA Flash settings
	Halt on	Allows you to select system response when POST Error has been detected.
Advanced BIOS Features	Quick Power On Self Test	Allows the system to skip certain tests while booting so the unit has a faster boot.
	Hard Disk Boot Priority	Allows Setting of ATA Flash Disk or Bootable Add-in Cards Boot Priority
	First Boot Device	Select Boot Device Priority. The default is set to Hard Disk.
	Second Boot Device	Select Boot Device Priority
	Third Boot Device	Select Boot Device Priority
	Boot other Device	Enable/disable boot from other device
	Bootup NumLock Status	Select Power On state for NumLock.
	Security Option	Select whether the Password is required every time the system boots or only when you enter Setup.

✎Support for specific Setup options may vary depending on your hardware configuration.

vc4815 Series Setup Utility *(Continued)*

Heading	Option	Description
Integrated Peripherals	USB Controller	Enable/disable USB controller
	Integrated Audio	Enable/disable onboard AC97 audio controller
	Network Controller	Enable/disable onboard LAN device
	Onboard Serial port 1 Onboard Serial port 2 Onboard Serial port 3 Onboard Serial port 4	Select serial port base IO port address and IRQ
	Onboard Parallel Port	Select parallel port base IO port address and IRQ
	Parallel Mode	Select parallel port transfer mode
	ECP Mode Use DMA	Select DMA channel if parallel is Operated in ECP mode.
Power Manage-ment Setup	Restore On AC/Power Loss	Allows you to set off, On, Last State
	Resume on PME	Enable/disable system wakeup capability for onboard LAN device and PCI Card
	Wake on Ring	Enable/disable Wake on Ring
	Resume On Alarm	Enable/disable Resume On Alarm, allow to set Date(of month), Resume Time(hh:mm:ss)
Load Defaults Setting		Select Yes or No (Y/N)

✎ Support for specific Setup options may vary depending on your hardware configuration.

Heading Option Description

vc4815 Series Setup Utility *(Continued)*

Heading	Option	Description
Set Supervisor Password		Allows you to set and enable the administrative password. ✎ If the administrative password is set, it is required to change the Setup options, flash the ROM, and make changes to certain plug and play settings under Windows
Set User Password		Allows you to set and enable the user password. ✎ When the user password is set, it prevents unauthorized access to the user's setup. User password provides read-only access to Setup options.
Save Setting and Exit		Saves data to CMOS
Exit without Saving		Exits the Setup Utility without saving any changes.

✎ Support for specific Setup options may vary depending on your hardware configuration.

4 Diagnostics and Troubleshooting

POST Diagnostic Front Panel LEDs and Audible Codes

This section covers the front panel LED codes as well as the audible codes that may occur before or during POST that do not necessarily have an error code or text message associated with them.

✎If you see flashing LEDs on a PS/2 keyboard look for flashing LEDs on the front panel of the computer and refer to the following table to determine the front panel LED codes.

✎Recommended actions in the following table are listed in the order in which they should be performed.

Diagnostic Front Panel LEDs and Audible Codes

Possible Cause	Beeps & LED blink	Activity	Recommended Action
Computer on.	None	Green Power LED On.	None
Pre-video memory	5	Green Power LED flashes five times, once every second, followed by a two second pause. Beeps stop after fifth iteration but LEDs continue until problem is solved.	CAUTION: To avoid damage to the DIMMs or the system board, you must unplug the computer power cord before attempting to reseat, install, or remove a DIMM module. 1. Reseat DIMMs. 2. Replace DIMMs one at a time to isolate the faulty module. 3. Replace third-Party memory with HP memory. 4.Replace the system board

Diagnostic Front Panel LEDs and Audible Codes

Possibl e Cause	Beeps & LED blink	Activity	Recommended Action
System unable to power on.	None	System does not power on and LEDs are not flashing.	Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, the power button is working correctly. Then, Replace the system board. OR If the hard drive LED does not turn on green then: 1. Check that the unit is plugged into a working AC outlet. 2. Check that both power supply cables are properly connected to the system board. 3. Check to see if the 5V_aux light on the system board is turned on. If it is turned on, then replace the power button harness. If the problem persists, replace the system board. 4. If the 5V_aux light on the system board is not turned on, remove the expansion cards one at a time until the 5V_aux light on the system board turns on. It the problem persists, replace the power adapter.

✎* Replacing the system board should ONLY be the last resort.

** Replacing the power supply should ONLY be the last resort.

Reload Flash Image and BIOS

System Requirements

To create a recovery device for the purpose of reflashing or restoring the software image on the ROM, you will need the following:

- One or more HP Compaq vc4815 Series Thin Clients
- USB flash device 512MB Compatible USB flash devices (drive keys) are available from www.diskonkey.com.

  This restore method will not work with all USB flash devices. USB flash devices with multiple partitions generally do not support this restore method. The range of USB flash devices available on the market is constantly changing. Not all USB flash devices (drive keys) have been tested with the HP Compaq Thin Client Imaging Tool.
- USB CD-ROM drive for thin client (if using the ISO Image option)

Before using the utility, you must download the appropriate image from http://www.hp.com/products/thinclientsoftware.

Hainan Image Reloading

1, Download the Image file *.gho from web.
2, Make a DOS Bootable USB flash drive(>=512M). Copy the image file and ghost.exe (ver11.0.1) to the USB flash drive.
3, Boot from the USB device. Run ghost.exe.

System BIOS Update

1. Download the SoftPaq .EXE file to a directory on your hard drive.
2. Execute the downloaded file and follow the on-screen instructions.
3. Choose one of the following three options when presented:
- Create BIOS Flash Diskette,
- Create BIOS Flash DriveKey

4, Boot Unit with the diskette or Flash DriveKey made last in step.
Do not power off or reset the unit during flash BIOS process.

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Thin Client vc4815 Specifications

GV665PA#AB2 vc4815 vc4815 LNX 512F/512R PRC

GV666PA#AB2 vc4815 LNX 1GBF/512R PRC

GV667PA#AB2 vc4815 LNX 2GBF/512R PRC

Specifications - vc4815 Series

Item	Description
Processor	VIA C7 1GHz
Chipset	VIA CN700 + 8237R
Operating System	Redflag Linux (Chinese version only)
Flash Memory	Apacer ADMII series 44PIN 180 degree DOM, 512 MB, 1GB, 2GB 2 slots
Memory	HP 512 MB DDR2 533 SDRAM or DDR2 667 SDRAM downgraded to 533 One slot (**NOTE:** 16 MB of system RAM is reserved for graphics memory)
Graphics	VIA S3 Unichromo Pro Graphic integrated
PCI Expansion	No
Browser	Firefox Explorer with java support
Client Management Software	Altiris Deployment Solution (client agent)
Terminal Personalities Standard	Yes, terminal emulation tool under Linux
Power adapter	65W
Keyboard	USB or PS/2 (both supported) Keyboard included with every thin client. Type of included keyboard (USB or PS/2) varies by region
Mouse	USB or PS/2 (both supported) Keyboard included with every thin client. Type of included keyboard (USB or PS/2) varies by region
Foot stand	Yes

Specifications - vc4815 Series

Item	Description		
Memory	**Flash Memory**	512 MB , 1GB, 2GB, Apacer ADMII series 44PIN 180 degree DOM	
	System Memory	512 MB DDR-II SDRAM **NOTE:** 16 MB of system RAM is reserved for graphics memory	
Graphics	VIA S3 Unichromo Pro VGA integrated		
	Mode	**Refresh Rates**	**Color Depth**
	800 x 600	60-120 Hz	16/32 bit
	1024 x 768	60-100 Hz	16/32 bit
	1152 X 864	60-85 Hz	16/24 bit
	1280 x 1024	60-85 Hz	16/32 bit
	1600 x 1200	60-85 Hz	16/24 bit
	640x480 800x600 1024x768 1280x720 1280x768 1280x800 1280x1024 1360x768 1366x768 1440x900 1600x1200 1920x 1440 1440x 900 1680 x 1050 1920x1200	60-160 Hz 60-120 Hz 60-100 Hz 60-85 Hz 60-85 Hz 60-85 Hz 60-85 Hz 60-85 Hz 60-85 Hz 60-85 Hz 60-85 Hz 60-75Hz 60 Hz 60 Hz 60 Hz	
Input/Output/ Peripheral Support	**Keyboard**	HP USB or PS2 Standard Keyboard	
	Mouse	HP USB or PS2 two-button scroll mouse	
	Printer	Local and/or network printers (RDP, ICA, LPD) as per the printer support statement	
	Video	VIA S3 Unichromo Pro VGA integrated	
Security	One security lock slot (cable lock sold separately)		
Terminal Server Protocols	Integrated rdesktop RDP client (1.4.1) and Citrix ICA 10.0 client support. Terminal Emulation software re-development for finance		
Networking	10/100 BaseT Fast Ethernet, twisted pair (RJ-45)		
	TCP/IP with DNS and DHCP, Direct Connection through RS-232		
	Point-to-Point Protocol (PPP),PPPoE, PPTP, EAP, PEAP, Wake on LAN (WOL), PXE		

I/O ports and connectors	Four USB ports (two in front, two in rear), 4 serial, one parallel, one RJ-45, two PS/2
Resident Operating System	Redflag Linux
Session Allocation Managers/Session Brokers	HP PC Session Allocation Manager Software for the Consolidated Client Infrastructure, Citrix Desktop Broker for Virtual Desktop Infrastructure
Server OS Compatibility/ Support	Open source Terminal Emulation: CT100, VT100, VT220, VT382, Xenix, ANSI Terminal service: Microsoft® Windows® NT 4.0 Server, Windows NT 4.0 Terminal Server Edition, Windows 2000/2003 Server families, Windows 2000/2003 Server Terminal Services, Windows 2000 Advanced Server, Windows 2000 Advance Server Terminal Services Citrix: Citrix Presentation Server 4.0, including the Desktop Broker feature, Citrix Metaframe Presentation Server 3.0, Citrix Metaframe XP Presentation Server, Citrix Metaframe 1.x, and Linux Server versions
Software Included	HP Connection Administrator, Firefox Browser, Citrix ICA, rdesktop RDP client (for RDP), Altiris Deployment Solution 6.8 (client agent) preinstalled. Terminal Emulation software re-development for finance system. Printing: support screen print, transparent print , 4 auxiliary serial ports terminal emulation & Graphic display Flash Player support, txtpad , control panel support Chinese input: Pinyin, Wu bi, Qu wei Note: Altiris Deployment Solution (management console) available as free download from Altiris at: www.altiris.com/hptc Other software available as add-ons (see www.hp.com/support for latest list of available add-ons)
Languages	Chinese only

Dimensions H x W x D (approximate)	**Without stand**	235 x 60 x 195 mm
Weight (approximate)	**Without stand**	1.9 kg
Environmental	**Temperature range on**	50° to 104° F (10° to 40° C)
	Temperature range off	-22° to 140° F (-30° to 60° C)
	Humidity	20% to 80% condensing 10% to 95% non-condensing
	Power[1]	Worldwide auto-sensing 100-240 VAC, 50-60 Hz, energy-savi automatic power-down, surge-tolerant, 65-watt power supp
Regulatory Compliance	**Agency**	CCC and CB
	Environmental	CECP (to be applied after product launch), ROHS complian
	ESD	4KV for Direct, and 8KV for discharge
Warranty	Three-year limited hardware warranty	
	NOTE: Certain restrictions apply. Consult the HP Customer Support Center for details	
Emulations	**Emulation**	**Terminal ID**
	ANSI	
	CT100	
	VT100	VT100, VT220, VT382
	Xenix	

Appendix A

HP Compaq vc4815 系列串口定义用户指南

HP Compaq vc4815终端默认具有4个串口，分别为串口一、串口二，串口三、串口四。

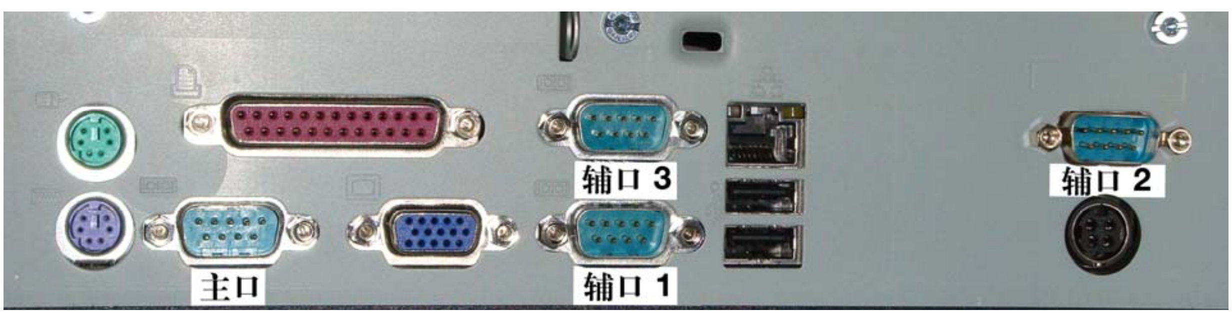
定义 / 引脚	主口（串口1）	辅口1（串口2）	辅口2（串口3）（TTL）	辅口3（串口4）
1脚	DCD/ +5V	+5V / DCD	+5V / DCD	+5V / DCD
2脚	RXD	RXD	RXD/TXD	RXD
3脚	TXD	TXD	TXD/RXD	TXD
4脚	DTR/ +12V	DTR/+5V /+12V	NC/DTR	DTR/+5V /+12V
5脚	GND	GND	GND	GND
6脚	DSR	DSR	NC/DSR	DSR
7脚	RTS/+12V	RTS/+12V	NC/RTS	RTS/+12V
8脚	CTS/RXD（TTL）	CTS	RXD/TXD(TTL)	CTS
9脚	RI/TXD（TTL）	RI	TXD/RXD(TTL)	RI

HP Compaq vc4815终端默认出厂设置

定义 / 引脚	主口（串口1）	辅口1（串口2）	辅口2（串口3）（TTL）	辅口3（串口4）
1脚	DCD	DCD	DCD	DCD
2脚	RXD	RXD	RXD	RXD
3脚	TXD	TXD	TXD	TXD
4脚	DTR	DTR	NC	DTR
5脚	GND	GND	GND	GND
6脚	DSR	DSR	NC	DSR
7脚	RTS	RTS	NC	RTS
8脚	CTS	CTS	RXD	CTS
9脚	RI	RI	TXD	RI

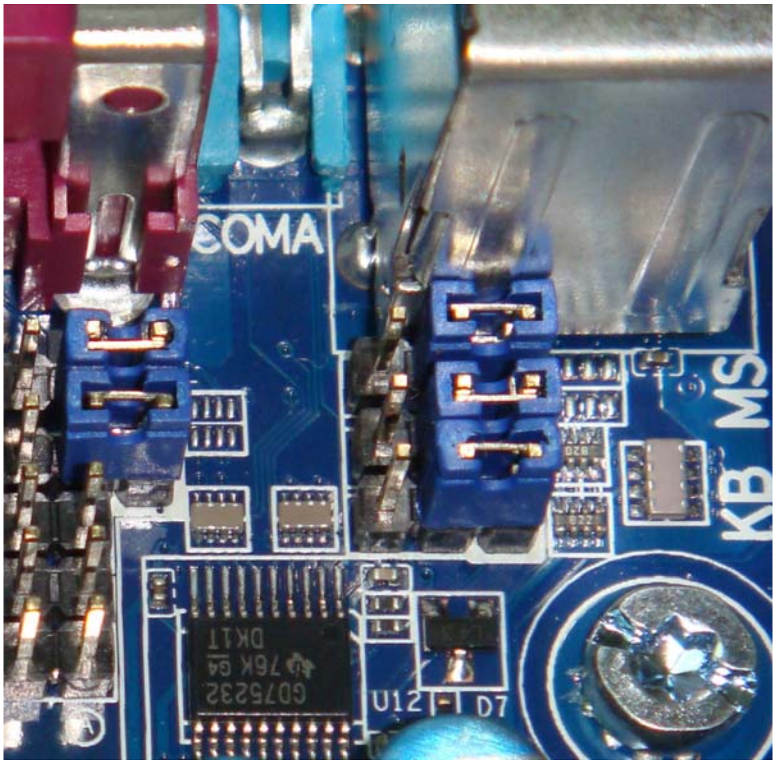
注：辅口2的 2、3脚为RS232，8、9脚为TTL

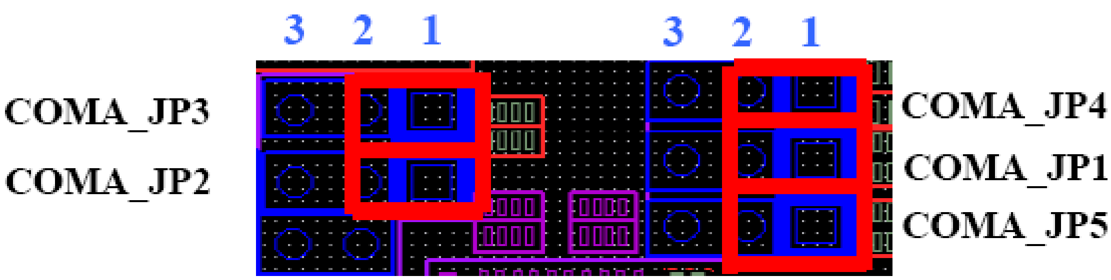
主串一的1脚可以提供+5V供电，8，9脚可跳选为RXD/TXD的TTL模式



主口（串口1）定义：

定义 / 引脚	主口（串口1）
1脚	DCD/ +5V
2脚	RXD
3脚	TXD
4脚	DTR/ +12V
5脚	GND
6脚	DSR
7脚	RTS/+12V
8脚	CTS/RXD（TTL）
9脚	RI/TXD（TTL）





跳线器默认如上图所示

COMA_JP1：更改跳线器将其置左(2连接3)，可为主口（串口1）的1脚取＋5V

COMA_JP2：更改跳线器将其置左(2连接3)，可为主口（串口1）的4脚取＋12V

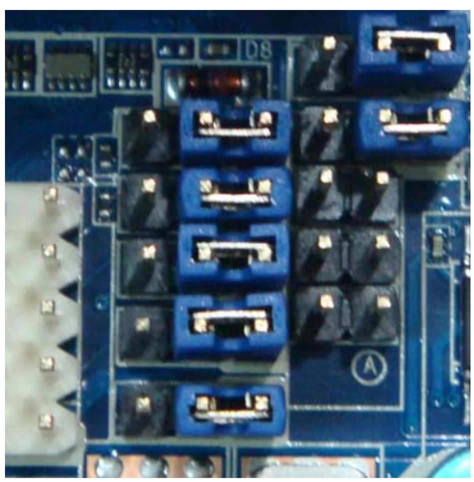
COMA_JP3：更改跳线器将其置左(2连接3)，可为主口（串口1）的7脚取＋12V

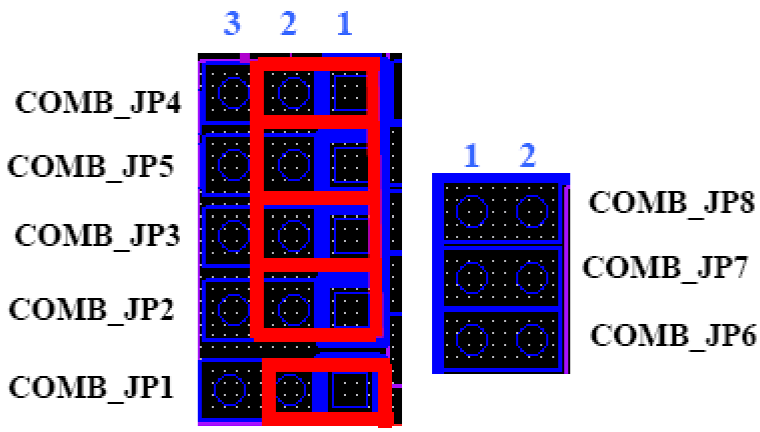
COMA_JP4：更改跳线器将其置左(2连接3)，可为主口（串口1）的8脚取RXD（TTL电平）

COMA_JP5：更改跳线器将其置左(2连接3)，可为主口（串口1）的8脚取TXD（TTL电平）

辅口2（串口3）（TTL）定义：

定义 / 引脚	辅口2（串口3）（TTL）
1脚	+5V　/ DCD
2脚	RXD/TXD
3脚	TXD/RXD
4脚	NC/DTR
5脚	GND
6脚	NC/DSR
7脚	NC/RTS
8脚	RXD/TXD(TTL)
9脚	TXD/RXD(TTL)





跳线器默认如上图所示

COMB_JP1：更改跳线器将其置右(2连接3)，可为辅口2(串口3)(TTL)的1脚取+5V

COMB_JP2：更改跳线器将其置左(2连接3)，可为辅口2(串口3)(TTL)的2脚取TXD(RS232)信号

COMB_JP3：更改跳线器将其置左(2连接3)，可为辅口2(串口3)(TTL)的3脚取RXD(RS232)信号

COMB_JP4：更改跳线器将其置左(2连接3)，可为辅口2(串口3)(TTL)的8脚取TXD（TTL电平）信号

COMB_JP5：更改跳线器将其置左(2连接3)，可为辅口2(串口3)(TTL)的9脚取RXD（TTL电平）信号

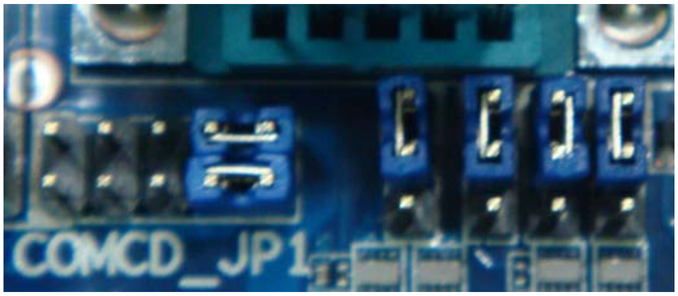
COMB_JP6：插上跳线器 (1连接2)，可为辅口2(串口3)(TTL)的4脚取DTR (RS232)信号

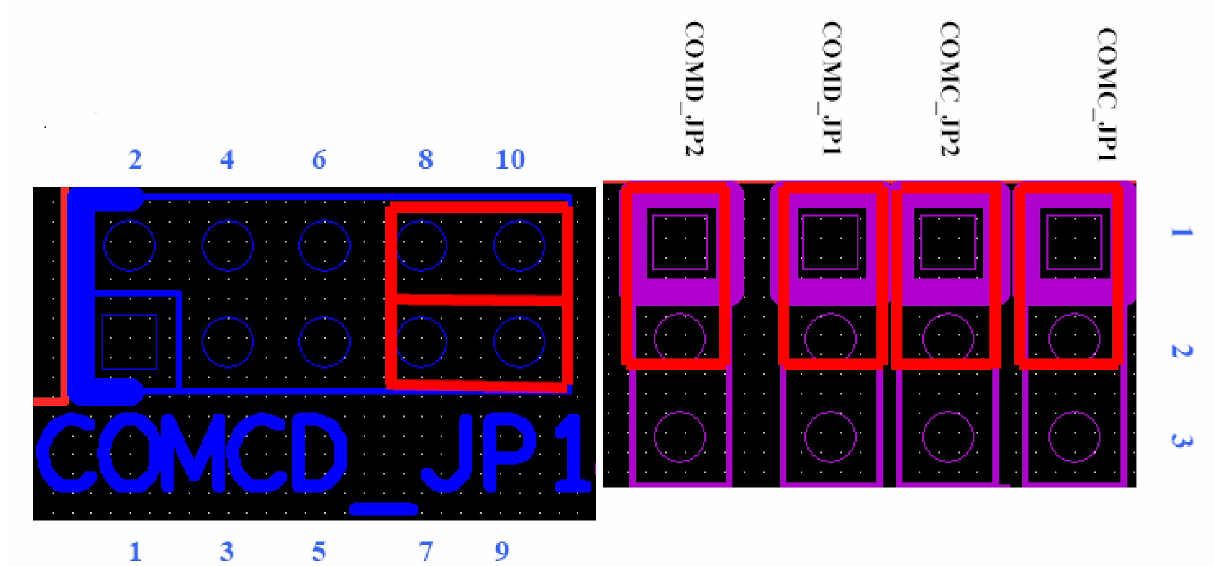
COMB_JP7：插上跳线器 (1连接2)，可为辅口2(串口3)(TTL)的6脚取RTS (RS232)信号

COMB_JP8：插上跳线器 (1连接2)，可为辅口2(串口3)(TTL)的7脚取DSR (RS232)信号

辅口1（串口2）与　　辅口3（串口4）定义：

定义 / 引脚	辅口1（串口2）	辅口3（串口4）
1脚	+5V　/ DCD	+5V / DCD
2脚	RXD	RXD
3脚	TXD	TXD
4脚	DTR/+5V /+12V	DTR/+5V /+12V
5脚	GND	GND
6脚	DSR	DSR
7脚	RTS/+12V	RTS/+12V
8脚	CTS	CTS
9脚	RI	RI





跳线器默认如上图所示

COMC_JP1：更改跳线器将其置下(2连接3)，可为辅口1（串口2）的1脚取+5V

COMC_JP2：更改跳线器将其置下(2连接3)，可为辅口1（串口2）的7脚取＋12V

COMCD_JP1：

COMCD_JP1	DTR	+5V	+5V	+12V
辅口1第 4脚	7连接9	5连接7	3连接5	1连接3
辅口4 第4脚	8连接10	6连接8	4连接6	2连接4

COMD_JP1：更改跳线器将其置下(2连接3)，可为辅口3（串口4）的1脚取+5V

COMD_JP2：更改跳线器将其置下(2连接3)，可为辅口3（串口4）的7脚取＋12V